

LUKASIEWICZ, E.; PERELMUTER, A.

New propositions for an instruction of traverses surveying.
p. 127. Vol. 12, no. 4, Apr. 1956. Warszawa

PRZEGLAD GEODEZYJNY

SOURCE: East European Accession List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956

LUKASIEWICA, E.; PERELMUTER, A.

Compensation of nodal points in polygon network. p. 376.
(PRZEGLAD GEODEZYJNY. Vol. 12, no. 10, Oct. 1956, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957, Uncl.

LUKASIEWICZ, E.

SCIENCE

Periodicals: PRZEGLAD GEODEZYJNY. Vol. 14, no. 8, Aug. 1958.

LUKASIEWICZ, E. National system of coordinates. Pt. 2. p. 301.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 4,
April 1959, Unclass.

LUKASIEWICZ, E.

Analysis of the plotting of a traversing network. Pt. 2. p.213.

PRZEGŁAD GEODEZYJNY. Warszawa, Poland. Vol. 15, no. 6, June 1959.

Monthly List of East European Accessions Index (EEAI), IC. Vol. 8, No. 9, September 1959
Uncl.

S/035/62/000/010/087/128
A001/A101

AUTHOR: Lukasiewicz, Eugeniusz

TITLE: Some problems of polygonometry in technical instructions

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1962, 14,
abstract 10G69 ("Przegl. geod.", 1962, v. 34, no. 2, 46 - 51,
Polish)

TEXT: The author notes that demands on polygonometry set forth by 7
technical instructions published in 1949 - 1959 by different organizations,
are contradictory. He analyzes expressions, given in instructions, for ad-
missible divergences d_l in results of double measurements of lines, angular
misclosures f_β and linear misclosures f_l in traverses, and arrives at the
conclusion that the following tolerances, proposed by him, are best sub-
stantiated:

$$d_l = 2\mu \sqrt{l}, \quad f_\beta = 2m_\beta \sqrt{n},$$

$$f_l = 2 \sqrt{\mu^2 L + \frac{m_\beta^2}{12} \frac{(n+1)(n+2)L^2}{n}},$$

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Some problems of polygonometry in...

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where μ is random influence coefficient in linear measurements, l is length of measured line, $m\beta$ is rms error in measuring angle, n is number of measured angles, L is traverse length. As to systematic errors, the author recommends that measurements be organized in a way free of them, or determination of their magnitude should be made by the careful analysis of measurement results and corresponding corrections should be introduced. It is inexpedient to fix the divergence value d_l in dependence of local conditions, since geodetic works are carried out for solving definite technical problems which determine the required precision of measurements. Local conditions should be taken in consideration in technical-economical calculations connected with performance of geodetic works. Adjustment of extended traverses can be conducted by distribution of misclosures f_x and f_y in sums of coordinate increments proportional to side lengths. Bent traverses should be adjusted by a rigorous method (by Hausbrandt's formulae or formulae used in the USSR). For 1- and 2-class traverses, whose rms errors of point positions are equal to ± 7.5 and ± 15 cm respectively, criteria of bending should be introduced: 1-class traverses should not deviate from the direction of the closing line by more than 0.1 of its length, and 2-class traverses - by not more than $1/7$.

N. Modrinskiy

[Abstracter's note: Complete translation]
Card 2/2

LUKASIEWICZ, E., mgr inż.

Quality contest in surveying works. Przegl geod 34 no.9:393-395 S '62.

LUKASIEWICZ, Eugeniusz, mgr inż.

Second Quality Contest of Geodetic Works. Przegl geod
35 no.7:308-310 J1'63.

ROWINSKI, Wojciech; MICHALSKI, Andrzej; LUKASIEWICZ, Hanna; OLSZEWSKI,
Waldemar; NIELUBOWICZ, Jan

Studies on the pathogenesis of acute pancreatic necrosis. Pt.1.
Pol. przegl. chir. 37 no.5:490-496 My '65.

1. Z Zakladu Chirurgii Doswiadczalnej Polskiej Akademii Nauk
(Kierownik: prof. dr. J. Nielubowicz).

NIELUBOWICZ, Jan; OLSZEWSKI, Waldemar; LUKASIEWICZ, Hanna; MICHALSKI, Andrzej; ROWINSKI, Wojciech; SZYFELBEJN, Stanisław; WIECKOWSKA, Wanda

Pathomechanism of meteorism. I. Composition of intestinal gases in paralytic ileus. Pol. przegl. chir. 36 no.5:707-715 My '64.

1. Z Zakładu Chirurgii Doswiadczałnej Polskiej Akademii Nauk (Kierownik: prof. dr J. Nielubowicz).

Country	: Poland	H-30
Category	: Chemical Technology. Chemical Products and Their Applications. -- Lacquers. Paints. Coatings.	
Abs. Jour.	: R. Zh. - Khim., No. 11, 1959	40827
Author	: Mielnikowa, B. and Lukasiewicz, J.	
Institut.	: Polish Aviation Research Institute [?]	
Title	: Comparison Tests on Synthetic Resins-Containing Paint Finishes Applied to Aluminum Alloy Surfaces	
Orig Pub.	: Prace Inst Lotn, No 3, 28-41 (1957)	
Abstract	: The authors have tested paints and enamels based on oils and on synthetic resins for hardening properties, elasticity at temperatures down to -50°, impact resistance, and resistance to water and gasoline. The water resistance of the coatings was measured by the hardness and adhesion of the films after immersion in water for 3, 6, and 18 hrs following 48-hrs and (in a separate series of tests) and 2-wk drying in air. The coatings were applied to pure aluminum and anode-oxidized aluminum panels. The results from the tests are summarized in tables and illustrated graphically.	
Card: 1/1	B. Shemyakin	

LACHOWICZ, T.; LUKASIEWICZ, J.

Role of alpha and beta Escherichia coli as a possible etiologic factor in diarrheas in children; preliminary communication. *Pediat. polska* 28 no.7:709-712 July 1953. (CIML 25:4)

1. Of the Institute of Bacteriology (Head--Prof. Z. Szymanowski, M.D.) and of the Second Pediatric Clinic (Head--Prof. F. Redlich, M.D.), Lodz Medical Academy.

GLOKSIN, Witold; LUKASIEWICZ, Janina

Blood transfusion in diphtheria. *Pediat.polska* 30 no.8:667-670
Aug '55.

1. Z II Kliniki Chorob Dzieci A.M. w Lodzi, Kierownik: prof.dr.
med. fr Redlich; Lodz, Armii Czerwonej 15.

(DIPHTHERIA, therapy,
blood transfusion)

(BLOOD TRANSFUSION, in various diseases,
diphtheria)

KAPUSCINSKA, W.; LUKASIEWICZ, J.; MOKRZYCKA, H.; ZARZYCKA, H.

Case of congenital tuberculosis in an infant. *Pediat. polska*
31 no.1:59-63 Jan 56.

1. Z II Kliniki Chorob Dzieci AM w Lodzi Kier: prof. dr. med.
Fr. Redlich; 1 z Zakladu Anatomii Patolog. AM w Lodzi. Kier:
prof. dr. med. A. Pruszczyński, Lodz, Armii Czerwonej 15.
(TUBERCULOSIS, in infant and child,
congen (Pol))

LUKASIEWICZ, Krzysztof; PINNO, Andrzej

Changing residential architecture. Architektura Pol no.3:105-108 '62

LUKASIEWICZ, L., inz.

A rolling machine for sheet metal straps. Przegl mech 20 no.22:692
'61.

(Rolling mill machinery)

LUKASIEWICZ, L., inz.

A hairline cutting device. Przegl mech 20 no.21:660 '61.

(Metal working machinery)

PAPLINSKI, Zbigniew; LUKASIEWICZ, Mieczyslaw

Angioma of the spleen. Pol. przegl. chir. 34 no.11:1205-1207 '62.

1. Z I Kliniki Chirurgicznej AM w Lublinie Kierownik: prof. dr
T. Jacyna-Onyszkiewicz.
(HEMANGIOMA) (SPLENIC NEOPLASMS)

LUKASZEWSKI, Marian, dr

Certain elements of state policy concerning the "turnover in
seamen's employment." Tech gosp morska 12 no.11:324-326 N
'62.

1. Wyzsza Szkola Ekonomiczna, Sopot.

CZECHOSLOVAKIA/Pharmacology. Toxicology. Narcotic and Hypnotic Drugs V

Abs Jour : Ref Zhur - Biol., No II, 1958, No 51842

Author : Lukasiewicz, M., Spaldonova R.

Inst : -

Title : Combination of Preadesthetic Drugs with Intravenous Administration of Narcotics

Orig Pub : Ceskosl. Farmac., 1957, No 6, 289-292

Abstract : The action of a series of drugs on motor activity and sensitivity to pain was studied in rats and mice. The greatest depression of motor activity in mice was produced by largactil, the greatest painkilling effect in rats - by benorcos (a preparation containing dioxylcodeinone, scopolamine and ephadrine). Largactil exhibited the greatest potentiating action upon the effect of narcomon (derivative of N-methyl-barbituric acid) and thiopenton (derivative of thiobarbitone acid). -- Ye.N. Guseva

Card : 1/1

LUKASIEWICZ, M.

Experimental studies on a combined effect of chlorpromazine. Cesk. fysiол.
7 no.3:261 May 58.

1. Farmakologicky ustav UK v Kosiciach.
 (CHLORPROMAZINE, admin.
 with amphetamine, in animals (Cz))
 (AMPHETAMINE, admin.
 with chlorpromazine, in animals (Cz))

KWIATKOWSKI, Mieczyslaw; JESIPOWICZ, Mieczyslaw; LUKASIEWICZ, Mieczyslaw

Usefulness of peroperative examination in gastric tumors. Polski przegl.
chir. 30 no.5:541-543 May 58.

(BREAST NEOPLASMS, surgery,
perop. histol. exam. (Pol))

LUKASIEWICZ, M.: SPALDONOVA, R.

"Relation of the premedication of oxedrine, ephedrine, and amphetamine to the
anesthetic and lethal effect of thicarbital"

Ceskoslovenska Fysiologie. Praha, Czechoslovakia. Vol. 8, no. 1, Jan 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 59, Unclass

VODRAZKA, J.; LUKASIEWICZ, M.; SPALDONOVA, R.

Studies on the effect of bemegride on toxic doses of chlorpromazine.
Cesk. fysiол. 8 no.3:258-259 Apr 59.

1. Farmakologicky ustav Veterinarskej fakulty a Farmakologicky ustav
Lek fak. UK, Kosice. Prednesene na III. fysiologickych dnoch v Brne
dna 14. 1. 1959.

(ANALEPTICS, effects,
bemegride on chlorpromazine tox. (Cz))
(CHLORPROMAZINE, tox.
eff. of bemegride (Cz))

NICAK, A.; LUKASIWICZ, M.; SPALDONOVA, R.

Relation of daptazol to analgesic and toxic effects of mecodine.
Cesk. fysiол. 8 no.5:454-455 S '59

1. Farmakologicky ustav Lek. fak. UK, Kosice.

(THIAZOLE, pharmacol.)

(ANALGESICS AND ANTIPYRETICS, pharmacol.)

LUKASIEWICZ, M.; VODRAZKA, J.; SPALDONOVA, R.; NICAK, A.

Influence on toxic activity of thiopentobarbital of certain central analeptics. Rozhl. chir. 38 no.9:610-615 S '59

1. Farmakologicky ustav lebarskej fakulty v Kosiciach a Farmakologicky ustav veterinarnej fakulty v Kosiciach.

(THIOPENTAL, toxicol.)

(ANALEPTICS, pharmacol.)

KLIMO, Zoltan; KARKOSKA, Valdimir; LUKASSIEWICZ, Milos

Treatment of depressive states. Cesk. psychiat. 55 no.1:11-13 Feb 59.

1. Psychiatricka klinika UK a Farmakologicky ustav UK, Kosice.

(DEPRESSION, ther.

amphetamine prior to electroshock ther. (Cz))

(AMPHETAMINE, ther. use

depression, admin. prior to electroshock ther. (Cz))

(SHOCK THERAPY, ELECTRIC, in various dis.

depression, with previous amphetamine admin. (Cz))

SPALDONOVA, R.; LUKASIEWICZ, M.; TAKAC, H.

Relation of micoren to some depressive effects of thiopental. Activ.
nerv. sup. 4 no.2:222-223 '62.

1. Farmakologicky ustav a Interna klinika Lekarskej fakulty Univerzity
P. J. Safarika v Kosiciach.

(ANALEPTICS pharmacol) (THIOPENTAL pharmacol)

LUKASIEWICZ, M.; FRAENKEL, E.; technika spolupraca HOVAN, J.; IGNACZ, I.

Contribution on a method of evaluating the analgesic action of
drugs. Cesk. farm. 12 no.2:85-89 F '62.

1. Farmakologicky ustav Lekarskej fakulty UPJS, Kosice.
(ANALGESICS AND ANTIPYRETICS) (PHARMACOLOGY)

LUKASIEWICZ, Maria; HARAŻDA, Maria

Bronchial adenoma. Pol. przegl chir. 36 no.7:863-871 Je '64.

1. Z Kliniki Chirurgii Klatki Piersiowej Studium Doksztalcaria
Lekarzy (Kierownik: prof. dr W. Rzepecki).

LUKASIEWICZ S.

Lukasiewicz S.

Lukasiewicz S., Eng. Arch. "Design Offices as Research Centres". (Biura projektowe jako osrodki studiow). Przegląd Budowlany, No 10-11, 1949, pp. 406-408.

The design offices gather into the framework of state organization the design process as well as the execution process. When organizing these building processes, as well as when setting up the executive state organizations, it is necessary to pay full attention to the accumulation of basic scientific knowledge. In Poland, as a result of war time destruction as well as of the neglect suffered in previous periods, a great deal has yet to be done in this line. This work cannot be done by an individual; it must be undertaken by the design offices. The author gives the general principles of this operation. The article touches upon a very important subject - the accumulation by the design offices of scientific documentation, as a source of new special information for future designs.

SO: Polish Technical Abstracts No. 2, 1951

LUKASIEWICZ, S.

242/14/1

624.07

A Method of Calculating a
Statically Indeterminable
Segmented Construction

S. Lukaszewicz

Arch. Budowy Maszyn

4(4), 427-457

1957

Poland

The method described avoids the necessity of solving a system of linear equations. It permits the evaluation of internal forces for infinitely rigid and for flexible transverse elements. The statically indeterminate forces

internal forces for infinitely thin
transverse elements. The statically indeterminate forces
in structures of this type are defined and given in the
form of a finite formula. Bibl.9.

11

LUKASIEWICZ, Stanislaw

The equations of the technical theory of shells of variable rigidity.
Archiw mech 13 no.1:107-116 '61.

1. Technical University, Warsaw.

26.2120

24.4200

1103, 1327, 1538

23517

P/C32/61/008/002/001/002
D217/D306

AUTHORS: Kapkowski, Jacek, and Łukasiewicz, Stanisław

TITLE: The influence of temperature on the uniform strength of rotating discs

PERIODICAL: Archiwum budowy maszyn. v. 8, no.2, 1961, 201-222

TEXT: This work gives a method for finding the shape of uniform strength rotating discs subjected to a radial temperature gradient. Variations of material properties with temperature are expressed approximately by means of exponential functions. Variations of temperature along the radius

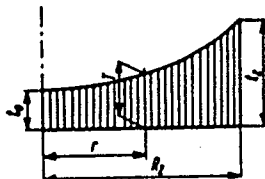


Fig. 1

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The influence of...

are assumed parabolic and expressed by

$$T = t_0 + t_1 Q^2 \quad \text{where} \quad (1)$$

$t_1 = t - t_0$ and $Q = \frac{r}{R_z}$ Properties of the material (modulus E and limit of plasticity σ_{pl}) will change with temperature. Therefore, the permissible stress, σ_{dop} is related to radius.

$$\sigma_{dop} = \sigma_{\psi_0}(Q), \quad (2)$$

Both E and σ_{pl} vary with temperature in such a way that they can be expressed with good accuracy by exponential functions. Thus

$$\sigma_{dop} = \sigma_0 e^{-\psi_0 Q}, \quad \text{and} \quad (2A)$$

$$\psi(Q) = \psi_0 e^{-\psi_0 Q},$$

where

$$\frac{\sigma_{dop}}{E} = \frac{\sigma_0}{E_0} e^{-\psi_0 Q}, \quad (3A)$$

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The influence of...

$$\varphi(\varrho) = e^{-\lambda_1 \varrho}. \quad (3B)$$

E_0 and σ_0 - modulus and allowable stress at the center of the disc;
 ν_1 and ν_2 - constant exponents for the given material. The variation of the coefficient of thermal expansion is

(4)

$$\alpha = \alpha_0 f(\varrho),$$

where

α_0 is the value at the center of the disc. The required thickness of the disc is assumed to be $h = h_0 e^\lambda$ where $\lambda = \lambda(\varrho)$. Therefore the familiar equation of equilibrium assumes the form

$$\frac{d\sigma_r}{dr} + \sigma_r \frac{d\lambda}{dr} + \frac{\sigma_r - \sigma_t}{r} + Q = 0 \quad (7)$$

The condition of continuity of strains for the axisymmetric system

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The influence of...

is

$$\frac{de_t}{dr} = \frac{e_r - e_t}{r} \quad (8)$$

where

$$e_t = \frac{1}{E}(\sigma_t - \nu\sigma_r) + \alpha T, \quad (9)$$

$$e_r = \frac{1}{E}(\sigma_r - \nu\sigma_t) + \alpha T.$$

As regards the condition of uniform strength, by the theorem of failure based on distortion energy (M.T. Huber) for the two dimensional stress system, there results

(10)

$$\sigma_r^2 - \sigma_r\sigma_t + \sigma_t^2 = \sigma_{\text{dep}}^2$$

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The influence of...

Alternatively, by the theorem of maximum shear stress, the stressed state is given by the polygon of Tresca (Fig. 3).

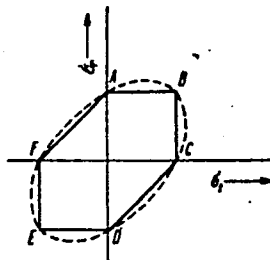


Fig. 3

The known solution of uniform strength discs stipulated $\sigma_r = \sigma_t = \sigma_{dop}$ which corresponds to point B. For the other sides of the polygon the conditions are:

$$\begin{aligned} \sigma_{dop} &= \sigma_r, & \text{gdy } \sigma_r > \sigma_t, \\ \sigma_{dop} &= \sigma_t, & \text{gdy } \sigma_t > \sigma_r, \\ \sigma_{dop} &= \sigma_r - \sigma_t, & \text{gdy } \sigma_r, \sigma_t \leq 0. \end{aligned} \quad (11)$$

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The influence of...

To determine thickness h it is necessary to solve three equations, namely (7) (8) and (10) or (11). The condition of uniform strength is first satisfied in the identity form by substitutions used in the theory of plasticity. Then stress distribution is found using condition (8) (which does not depend on h). Finally the thickness function h is found by the equation of equilibrium. Boundary conditions: For a disc without a hole in the center there is $\sigma_r = \sigma_t = \sigma_{dop}$ at $r = 0$

$$\sigma_r = \sigma_t = \sigma_{dop} \quad \text{dla} \quad r = 0. \quad (12)$$

For a disc with a bore: $\sigma_r = 0$ at $r = R_0$ Rim loading from turbine blades is

$$n_r = \frac{Q}{g} \frac{i\Omega^2 r_c}{2\pi R_s}$$

where
 Q - weight of one blade; i - number of blades; r_c - radius to blade center of gravity. Then thickness at $\varrho = 1$ is

$$h_0 = \frac{n_r}{\sigma_{dop}(\varrho=1)} = \frac{Q i \Omega^2 r_c}{2\pi R_s \sigma_0 g \psi(\varrho)}. \quad (13)$$

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The influence of...

If the blades are set in a wider shroud (Fig. 4) then

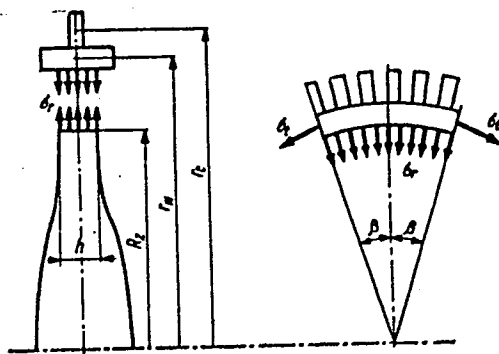


Fig. 4

$$h_s = \frac{\Omega^2 F}{\sigma_r R_s g} \left(r_w^2 \gamma + \frac{Q r_f^2}{2 \pi F} \right) - \gamma \frac{F}{R_s} - \frac{e_s}{\sigma_r} \frac{EF}{r_w} + \frac{\alpha T E_s F}{\sigma_r R_s}. \quad (17)$$

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The influence of...

where F - shroud cross - sectional area. The authors then examine the solution based on Huber-Mises (Distortion Energy). To satisfy Eq. 10 in an identity form stresses are expressed in terms of one function $\omega = \omega(\varrho)$:

$$\begin{aligned}\sigma_r &= 2k \cos\left(\omega + \frac{\pi}{6}\right) \psi(\varrho), \\ \sigma_t &= 2k \cos\left(\omega - \frac{\pi}{6}\right) \psi(\varrho)\end{aligned}\quad (18)$$

where $k = \sigma_0/\sqrt{3}$
By continuity of strains there then results

$$\frac{d\omega}{dr} = - \frac{\frac{1}{\varphi(\varrho)} \left[\varphi'(\varrho) \sin(\omega + \mu) + \frac{\alpha T' E_0}{2k \sqrt{1-\nu+\nu^2}} \right] + \frac{1+\nu}{\sqrt{1-\nu+\nu^2}} \frac{\sin \omega}{r}}{\cos(\omega + \mu)} \quad (20)$$

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The influence of...

in which

$$\sin \mu = \frac{(1-\nu)\sqrt{3}}{2\sqrt{1-\nu+\nu^2}}, \quad \cos \mu = \frac{1+\nu}{2\sqrt{1-\nu+\nu^2}}, \quad (21)$$

To eliminate the temperature variable, ϱ is replaced by R , so that

$$R = \beta \varrho = \sqrt{\frac{\alpha T' E_0}{2k\sqrt{1-\nu+\nu^2}}} \varrho \quad (22)$$

where $T' = dT/dr$.

Also if $\nu = \frac{\nu_1}{p} = 0$,

$$\frac{d\omega}{dr} = - \frac{R + \frac{1+\nu}{\sqrt{1-\nu+\nu^2}} \frac{\sin \omega}{R}}{\cos(\omega + \mu)} \quad (24)$$

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The influence of...

By equations (18) and (20) the final solution of (7) is

$$\frac{d\lambda}{d\varrho} = \frac{-\frac{\gamma\Omega^2 R_s^2}{2kg} \frac{\varrho}{\psi(\varrho)} + \frac{\sin \omega}{\varrho}}{\cos\left(\omega + \frac{\pi}{6}\right)} + \operatorname{tg}\left(\omega + \frac{\pi}{6}\right) \frac{d\omega}{d\varrho} - \frac{\psi'(\varrho)}{\psi(\varrho)} \quad (25)$$

which can be integrated.

The constant of integration C is obtained from $h = h_0 e^{\lambda}$ by the boundary condition: $h = h_0$ and $\lambda = 0$. On substitution of (18) formula (17) for h_0 becomes

$$h_0 = \frac{E_1 F}{2kR_s \cos\left(\omega_s + \frac{\pi}{6}\right)} \left[\frac{\Omega^2}{gE_1} \left(r_s^2 \gamma + \frac{Qr_s^2}{2\pi F} \right) + \right. \\ \left. - \frac{2k}{E_0} R_s \sqrt{1 - \gamma + \gamma^2} \sin(\omega_s + \mu) - aT(R_s - r_s) \right] - \gamma \frac{F}{R_s} \quad (27)$$

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The influence of...

where ω_2 is the value of ω at $\varrho = 1$, calculated from Eq.(20). The authors also examine the solution based on the theorem of maximum shearing stress. In this case solutions for the discs with and without a central hole are different. Disc without a hole: assuming that $\sigma_r > \sigma_t$ for the whole disc, the following substitution can be made:

$$\sigma_r = \sigma_{dop}, \quad \sigma_t = (1 - 2x) \sigma_{dop}, \quad (28)$$

where x - unknown function of ϱ . Neglecting the variation of expansion coefficient α , the final equation for the conditions of uniform strength and strain continuity is

$$\frac{dx}{dR} + x \left(\kappa \nu + \frac{1 + \nu}{R} \right) + \kappa \frac{1 - \nu}{2} - R e^{\kappa R} = 0. \quad (32)$$

where $\beta = E_0 t_1 \alpha_0 / \sigma_0$. $\kappa_1 / \sqrt{\beta} = \kappa$

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The influence of...

and

$$\varrho = R/\sqrt{\beta},$$

The solution of equation (32) is anticipated in the form of a series with ϱ as a small parameter, (30)

$$x = x_0 + \varrho x_1 + \varrho^2 x_2 + \dots$$

The exponential function in (32) is also expanded and only three first terms are taken from each series. Finally, using equilibrium equation (7) the authors obtain: (Eq. 35)
Neglecting the change of material properties but taking into account thermal stresses, a strict solution is obtained in the form

$$\lambda = \lambda_0 + \left(\frac{\beta}{3 + \nu} + \frac{\gamma \Omega^2 R^2}{2 \sigma_0 g} \right) (1 - \varrho^2). \quad (36)$$

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The influence of...

$$\lambda = \lambda_0 + A(\varrho - 1) + B(\varrho^2 - 1) + C(\varrho^3 - 1) + D(\varrho^4 - 1),$$

$$A = \kappa_1 + \frac{\kappa_1(1-\nu)}{2+\nu},$$

(35)

$$B = -\frac{\beta}{3+\nu} + \frac{\kappa_1^2(1-\nu)}{2(2+\nu)(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{2\sigma_0 g},$$

$$C = -\frac{2\beta\kappa_1}{3(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{3\sigma_0 g} \kappa_1,$$

$$D = -\frac{\kappa_1^2\beta}{4(3+\nu)} - \frac{\gamma\Omega^2 R_1^2}{8\sigma_0 g} \kappa_1^2.$$

This solution is valid for: $0 < x < 1/2$. Finally, after examining the case of a disc with a bore, the authors illustrate the method by calculating disc profiles with the following data:

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The influence of...

$$\begin{aligned} R_0 &= 20 \text{ cm}, \Omega = 1500 \text{ 1/sek}, \nu = 0,3, \\ \sigma_0 &= 3,65 \cdot 10^3 \text{ kG/cm}^2, \gamma = 7,85 \cdot 10^{-3} \text{ kG/cm}^2, \\ \alpha_0 &= \text{const} = 1,2 \cdot 10^{-3} \text{ 1/}^\circ\text{C}, E_0 = 2 \cdot 10^4 \text{ kG/cm}^2, \\ \kappa_1 &= 0,05, \kappa_2 = 0,17, t_1 = 250 \text{ }^\circ\text{C}, \\ g &= 9,81 \cdot 10^3 \text{ cm/sek}^2. \end{aligned} \quad (X)$$

rim loading $n_r = 2860 \text{ Kg/cm}$; allowable stress at rib

$$(\sigma_{\text{dop}})_{\varphi=1} = 3,65 \cdot 10^3 e^{-0,17} = 3,08 \cdot 10^3 \text{ kG/cm}^2 \quad (Y)$$

and hence

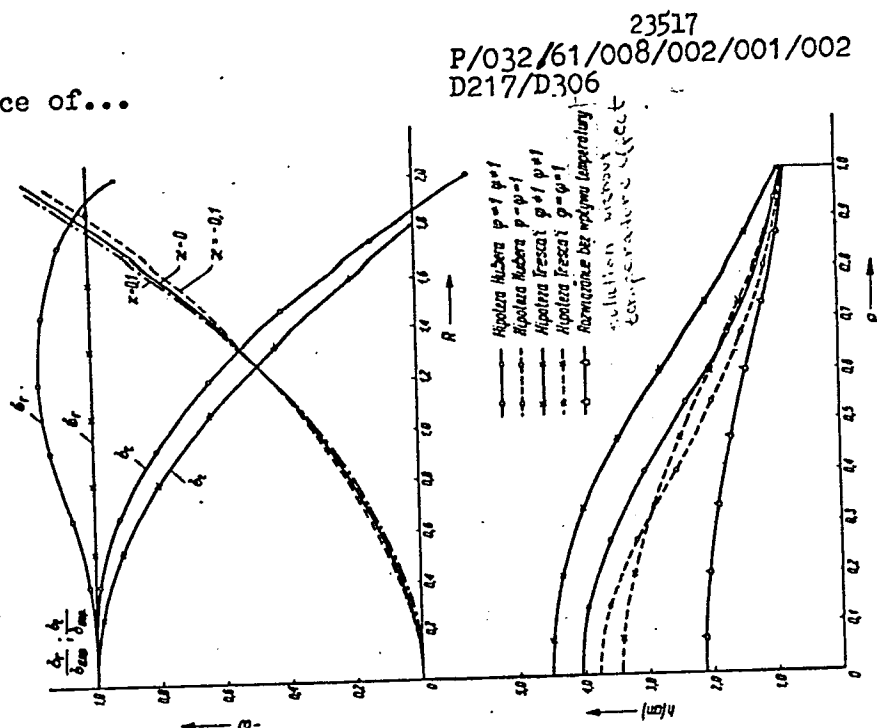
$$l_0 = n_r / (\sigma_{\text{dop}})_{\varphi=1} = 0,93 \text{ cm.} \quad (V)$$

The results for a disc without a hole are given graphically in Fig. 9. For a disc with a bore the same data as above was used except that $\nu = .33$ and $m = 4$. Also: $\varphi = 0.2$, $R_0 = 4 \text{ cm}$. The results for this case are given in Fig. 10. There are 2 tables, 10 figures and 6 references; 5 Soviet-bloc and 1 non-Soviet-bloc.

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The influence of...

Fig. 9

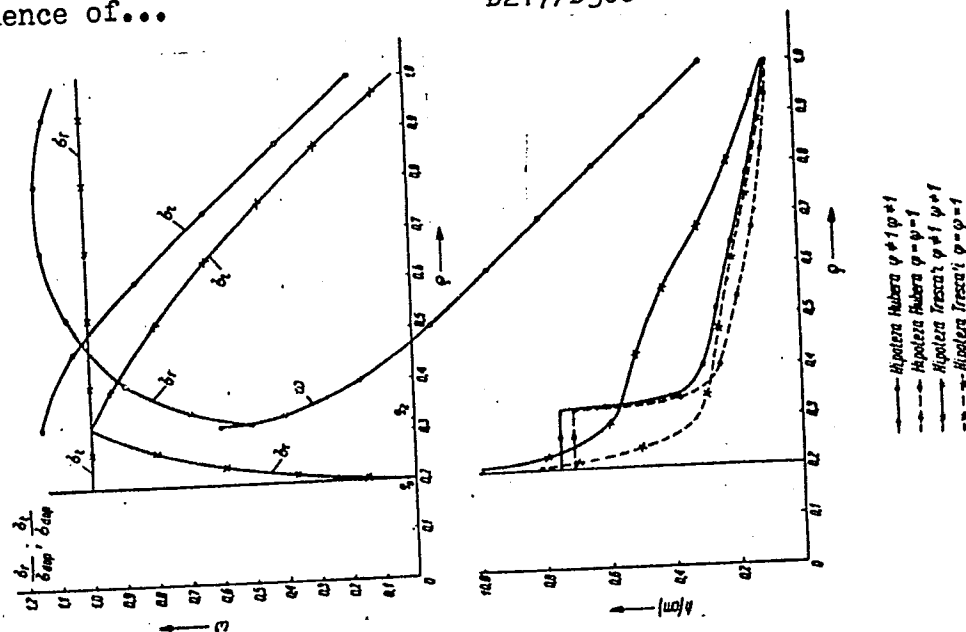


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The influence of...

Fig. 10



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The influence of...

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D217/D306

The reference to the English-language publication reads as follows:
S. Timoshenko, Theory of Elasticity, London 1954.

SUBMITTED: April, 1960

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10.6000 1327

31124
P/032/61/008/004/002/002
D265/D301

AUTHOR: Lukasiewicz, Stanislaw

TITLE: Simplified solutions of ring-shaped shells of double curvature

PERIODICAL: Archiwum budowy maszyn, v.8, no.4, 1961, 427-446

TEXT: Arbitrarily loaded shells of revolution of constant thickness are considered in this paper. Experiments have shown that even a slight curvature given to such shells increases their strength considerably. The author, therefore, gives a simplified solution to this problem to make it more suitable for practical computation. The method of solution is based on the equation of the V.Z. Vlasov technical theory of shells. Eq. (1)

$$H \Delta \Delta \Phi + \Delta_x w = (1 - \nu) H \Delta U,$$

$$D \Delta \Delta w - \Delta_x \Phi = X_3 - (a_1 + a_2) U$$

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Simplified solutions of ...

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where Eq. (2) $D = \frac{Eh^3}{12(1-\nu^2)}$, $H = \frac{1}{Eh}$,

w - the stress function, w - the deflection normal to the middle surface, U - the potential of the tangential load a_1, a_2 -

the principal curvatures of the middle surface. An approximate method of solution is presented, whereby in the case of shallow shells the components of the first quadratic form of the middle shell surface are replaced by the components of the quadratic form of the plane on which the shell is projected. In case of the high elevation shell a similar simplification is introduced, whereby a properly selected conical or cylindrical surface is chosen in order to project the appropriate components of the quadratic form of the control shell surface. The paper gives the solutions for the internal forces, bending moments, torques shearing forces and membrane forces for the case of doubly-curved shells approximating the conical and cylindrical forms.

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Simplified solutions of ...

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P/032/61/008/004/002/002
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Solutions are given in terms of exponential expressions for the conical shaped shells, and for the cylindrical shells, solutions are given in trigonometric forms. The method is illustrated by a numerical example and the results obtained are verified by experimental methods using strain gauges. There are 10 figures and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: Encyclopedia of Physics Mathematical Methods II str. 378. Springer Verlag, Berlin, Goettingen, Heidelberg 1957

SUBMITTED: March, 1961

X

Card 3/3

KAPOWSKI, J.; LUKASIEWICZ, S.

The influence of temperature on the shape of rotating disks of uniform strength. Bul Ac Pol tech 9 no.1:7-16 '61.

(EEAI 10:9)

1. Chair of Strength of Airplain Structures, Warsaw Technical University. Presented by W. Olszak.

(Disks, Rotating)

10 9100 also 1327, 1103, 1136

P/033/61/013/001/007/009
D242/D301

AUTHOR: Łukasiewicz, Stanisław (Warsaw)

TITLE: The equations of the technical theory of shells of variable rigidity

PERIODICAL: Archiwum mechaniki stosowanej, v. 13, no. 1, 1961, 107-116

TEXT: The paper contains the derivation of equations of the engineering theory of shells with variable rigidity using the approximate assumptions as follows: 1) Deformations small relative to thickness, and the material is Hookian; 2) Points on a normal before deformation lie on a normal after; 3) No interaction between layers parallel to middle surface; 4) Thickness of shell small in relation to the curvature radius. The present paper uses as a base the theory of shells of constant thickness given by V.Z. Vlasov (Ref. 1: Obshchaya teoriya obolochek (General Theory of Shells) Moskva, 1949). (Fig. 1). Under the action of external forces, points in the middle surface are given displacement components $u_1, u_2, u_3 = W$ and strain

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The equations of the technical theory... components ε_{11} , ε_{22} , ε_{33} . The strain displacement relations are

$$\begin{aligned}\varepsilon_{11} &= \frac{1}{A_1} \frac{\partial u_1}{\partial a_1} + \frac{1}{A_1 A_2} \frac{\partial A_1}{\partial a_2} u_2 + k_1 w + \frac{1}{2} \left(\frac{1}{A_1} \frac{\partial w}{\partial a_1} \right)^2, \\ \varepsilon_{22} &= \frac{1}{A_2} \frac{\partial u_2}{\partial a_2} + \frac{1}{A_1 A_2} \frac{\partial A_2}{\partial a_1} u_1 + k_2 w + \frac{1}{2} \left(\frac{1}{A_2} \frac{\partial w}{\partial a_2} \right)^2, \\ \varepsilon_{12} &= \frac{A_1}{A_2} \frac{\partial}{\partial a_2} \left(\frac{u_1}{A_1} \right) + \frac{A_2}{A_1} \frac{\partial}{\partial a_1} \left(\frac{u_2}{A_2} \right) + \frac{1}{A_1 A_2} \left(\frac{\partial w}{\partial a_1} \cdot \frac{\partial w}{\partial a_2} \right),\end{aligned}\quad (1.1)$$

where k_1 and k_2 are the curvatures of the middle surface of the shell along the coordinate lines α_1 , α_2 . A_1 and A_2 are the coefficients of the first quadratic form of the middle surface. The non-linear terms result from large deflection w and are the further terms of the expansion in Vlasov's theory. Curvature changes κ_{11} , κ_{22} and twist κ_{12} are given by

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The equations of the technical theory... ²³⁵²⁴
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$$\begin{cases} \kappa_{11} = -\frac{1}{A_1} \frac{\partial}{\partial a_1} \left(\frac{1}{A_1} \frac{\partial w}{\partial a_1} \right) - \frac{1}{A_1 A_2^2} \frac{\partial A_1}{\partial a_2} \frac{\partial w}{\partial a_2}, \\ \kappa_{22} = -\frac{1}{A_2} \frac{\partial}{\partial a_2} \left(\frac{1}{A_2} \frac{\partial w}{\partial a_2} \right) - \frac{1}{A_1^2 A_2} \frac{\partial A_2}{\partial a_1} \frac{\partial w}{\partial a_1}, \\ \kappa_{12} = -\frac{1}{A_1 A_2} \left(\frac{\partial^2 w}{\partial a_1 \partial a_2} - \frac{1}{A_1} \frac{\partial A_1}{\partial a_2} \frac{\partial w}{\partial a_1} - \frac{1}{A_2} \frac{\partial A_2}{\partial a_1} \frac{\partial w}{\partial a_2} \right), \end{cases} \quad (1.2)$$

Equilibrium equations are

$$\begin{cases} N_{11} = K(a_1, a_2) (\varepsilon_{11} + \nu \varepsilon_{22}), & N_{22} = K(a_1, a_2) (\varepsilon_{22} + \nu \varepsilon_{11}), \\ N_{12} = N_{21} = S = \frac{1}{2} K(a_1, a_2) (1 - \nu) \varepsilon_{12}; \\ M_{11} = D(a_1, a_2) (\kappa_{11} + \nu \kappa_{22}), & M_{22} = D(a_1, a_2) (\kappa_{22} + \nu \kappa_{11}), \\ M_{12} = M_{21} = H, & = -D(a_1, a_2) (1 - \nu) \kappa_{12}, \end{cases} \quad (2.1)$$

where

$$K(a_1, a_2) = \frac{Eh(a_1 a_2)}{1 - \nu^2}, \quad D(a_1, a_2) = \frac{Eh^3(a_1 a_2)}{12(1 - \nu^2)}.$$

and, by considering the element bounded by $\alpha_1 = \text{const.}$ and $\alpha_2 = \text{const.}$

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The equations of the technical theory...

$$\begin{aligned}
 & \frac{\partial}{\partial a_1} (A_2 N_{11}) - N_{22} \frac{\partial A_2}{\partial a_1} + \frac{\partial}{\partial a_2} (A_1 S) + S \frac{\partial A_1}{\partial a_2} + A_1 A_2 X_1 = 0, \\
 & \frac{\partial}{\partial a_2} (A_1 N_{22}) - N_{11} \frac{\partial A_1}{\partial a_2} + \frac{\partial}{\partial a_1} (A_2 S) + S \frac{\partial A_2}{\partial a_1} + A_1 A_2 X_2 = 0, \\
 & -(x_{11} + k_1) N_{11} - (x_{22} + k_2) N_{22} - 2Sx_{12} - \\
 & \quad - \frac{1}{A_1 A_2} \left[\frac{\partial}{\partial a_1} (A_2 Q_{11}) + \frac{\partial}{\partial a_2} (A_1 Q_{22}) \right] + X_3 = 0, \quad (2.2) \\
 & \frac{\partial}{\partial a_1} (A_2 H_1) + H_1 \frac{\partial A_2}{\partial a_1} - \frac{\partial}{\partial a_2} (A_1 M_{22}) + M_{11} \frac{\partial A_1}{\partial a_2} - A_1 A_2 Q_{22} = 0, \\
 & \frac{\partial}{\partial a_2} (A_1 H_2) + H_2 \frac{\partial A_1}{\partial a_2} - \frac{\partial}{\partial a_1} (A_2 M_{11}) + M_{22} \frac{\partial A_2}{\partial a_1} - A_1 A_2 Q_{11} = 0, \\
 & N_{12} - N_{21} + \frac{M_{12}}{R_1} - \frac{M_{21}}{R_2} = 0.
 \end{aligned}$$

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The equations of the technical theory...

Moment equilibrium in relation to the Z-axis gives $N_{12} \doteq N_{21}$ and $M_{12} \doteq M_{21}$. N_{11} , N_{22} and S are expressed in terms of the stress function Φ . The above equilibrium equations for these forces may be satisfied by $\Phi(\alpha_1, \alpha_2)$ even where X_1 and $X_2 \neq 0$, provided that these forces have a potential U . Assuming that $X_1 = -\frac{1}{A} \frac{\partial U}{\partial \alpha_1}$, $X_2 =$

$-\frac{1}{A_2} \frac{\partial U}{\partial \alpha_2}$ and manipulating the expressions for N_{11} , N_{22} , S , ϵ_{11} , ϵ_{22} , ϵ_{12} , κ_{11} , κ_{22} , κ_{12} , Q_{11} , Q_{22} given above, by the methods of

Vlasov and V.V. Novozhilov (Ref. 2: Teoriya tonkikh obolochek (Theory of Thin Shells), Moskva, 1951) the differential equation, which follows is obtained

$$\Delta(D\Delta w) - (1-\nu)L(D, w) + (k_1 + \kappa_{11})N_{11} + (k_2 + \kappa_{22})N_{22} + 2S\kappa_{12} - X_3 = 0. \quad (3.8)$$

D , the rigidity, is a function of α_1 and α_2 , and Δ is the Laplace operator in the coordinates α_1, α_2 . $L(D, w)$ denotes the expression

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The equations of the technical theory... D242/D301

$$\begin{aligned}
 L(D, w) = & \frac{1}{A_1 A_2} \left[\frac{\partial}{\partial a_1} \left(\frac{1}{A_1} \frac{\partial D}{\partial a_1} \right) + \frac{1}{A_2^2} \frac{\partial A_1}{\partial a_2} \frac{\partial D}{\partial a_2} \right] \left[\frac{\partial}{\partial a_2} \left(\frac{1}{A_2} \frac{\partial w}{\partial a_2} \right) + \right. \\
 & \left. + \frac{1}{A_1^2} \frac{\partial A_2}{\partial a_1} \frac{\partial w}{\partial a_1} \right] + \frac{1}{A_1 A_2} \left[\frac{\partial}{\partial a_2} \left(\frac{1}{A_2} \frac{\partial D}{\partial a_2} \right) + \frac{1}{A_1^2} \frac{\partial A_2}{\partial a_1} \frac{\partial D}{\partial a_1} \right] \times \\
 & \times \left[\frac{\partial}{\partial a_1} \left(\frac{1}{A_1} \frac{\partial w}{\partial a_1} \right) + \frac{1}{A_2^2} \frac{\partial A_1}{\partial a_2} \frac{\partial w}{\partial a_2} \right] - \\
 & - \frac{2}{A_1^2 A_2^2} \left(\frac{\partial^2 D}{\partial a_1 \partial a_2} - \frac{1}{A_2} \frac{\partial A_2}{\partial a_1} \frac{\partial D}{\partial a_2} - \frac{1}{A_1} \frac{\partial A_1}{\partial a_2} \frac{\partial D}{\partial a_1} \right) \left(\frac{\partial^2 w}{\partial a_1 \partial a_2} - \right. \\
 & \left. - \frac{1}{A_2} \frac{\partial A_2}{\partial a_1} \frac{\partial w}{\partial a_2} - \frac{1}{A_1} \frac{\partial A_1}{\partial a_2} \frac{\partial w}{\partial a_1} \right). \quad (3.10)
 \end{aligned}$$

The operator L is expressed in (α_1, α_2) as in the operator L of A. Ts. Vol'mire (Ref. 7: Gibkiye plastinki i obolochki, Moskva, 1956) [Abstracter's note: Operator L is not defined]. N_{11} and N_{22} are expressed by means of the stress function $\Phi(\alpha_1, \alpha_2)$, whence

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The equations of the technical theory... P/033/61/013/001/007/009
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$\Delta(D\Delta w) - (1 - \nu)L(D, w) = \Delta_k \bar{q} - (k_1 + k_2)U + L(\bar{q}, w) + X_3. (3.11)$
 $L(\bar{q}, w)$ is of the same structure as $L(D, w)$ and the operator Δ_k is from Vlasov

$$\Delta_k = \frac{1}{A_1 A_2} \left[\frac{\partial}{\partial a_1} \left(\frac{A_2}{A_1} k_1 \frac{\partial}{\partial a_1} \right) + \frac{\partial}{\partial a_2} \left(\frac{A_1}{A_2} k_1 \frac{\partial}{\partial a_2} \right) \right]. \quad (3.12)$$

If $\epsilon_{11}, \epsilon_{22}, \epsilon_{12}$, are expressed as

$$\epsilon_{11} = \frac{1}{Eh} (N_{11} - \nu N_{22}), \quad \epsilon_{22} = \frac{1}{Eh} (N_{22} - \nu N_{11}), \quad \epsilon_{12} = \frac{1}{Eh} \cdot 2(1 + \nu)S \quad (3.13)$$

and the forces N_{11}, N_{22} and N_{12} are expressed in terms of the stress function $\bar{q}$, then

$$\Delta(H\Delta\bar{q}) - (1 + \nu)L(H, \bar{q}) - (1 - \nu)\Delta(HU) + \Delta_k w + \frac{1}{2} L(w, w) = 0, \quad (3.14)$$

where

$$H = \frac{1}{Eh} \quad (3.15)$$

The above two differential equations are the solution for a shell with rigidity variable in an arbitrary manner. In conclusion, the
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The equations of the technical theory... D242/D301

differential equations may be solved by means of known approximate methods such as the Ritz or Garlerkin method [Abstracter's note: Ritz's and Garlerkin's theories not specified] or those of perturbation, iteration, finite differences, etc. For a shell of revolution it is convenient to expand the load and section forces in the Fourier series, the influence of each harmonic being determined separately. The problem is reduced then to the solution of two ordinary differential equations of the fourth order for each harmonic. There are 1 figure and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-language publications read as follows: S. Timoshenko, Theory of Plates and Shells, New York and London 1940; H. D. Conway, On an Axially Symmetrically Loaded Circular Shell of Variable Thickness, Zamm, 1-2, 38 (1958).

ASSOCIATION: Warsaw Technical University

SUBMITTED: June 6, 1960

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10.6000 1327

31125
P/033/61/013/005/001/006
D265/D302

AUTHOR: Lukasiewicz, Stanisław (Warsaw)

TITLE: Variable rigidity shells of revolution subjected to an arbitrary load

PERIODICAL: Archiwum mechaniki stosowanej, v. 13, no. 5, 1961, 563-578

TEXT: This paper provides the solutions to the problem of arbitrarily loaded shells of revolution based on the equations of the technical theory of shells of variable thickness deduced in the author's previous publication (Ref.5: Arch. mech. stos., v. 13, no. 1 (1961)). Symmetric shells are considered, whose rigidity is a function of the variable measured in the meridional direction. The differential equations of variable rigidity shells is written in the form of

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Variable rigidity shells ...

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$$\begin{cases} \Delta(D\Delta w) - (1 - \nu)L(Dw) - \Delta_k \Phi = X_3 - (a_1 + a_2)U, \\ \Delta(H\Delta \Phi) - (1 + \nu)L(H\Phi) + \Delta_k w = (1 - \nu)\Delta(HU) \end{cases} \quad (1.1)$$

where D and H - functions of shell rigidity, Φ - stress function, w - deflection normal to the middle surface, U - the potential of the tangential load, a_1, a_2 - principal curvatures of the middle surface. Equations are derived in differential form for the internal forces, shear forces and the strain and displacement relationship for the middle surface of conical and spherical shells. An approximate method of solution is provided by assuming (1.1) in the form of the Fourier's series

$$w = \sum_{n=0}^{\infty} w_{sn} \cos n\alpha_2, \quad \Phi = \sum_{n=0}^{\infty} \Phi_{sn} \cos n\alpha_2 \quad (2.2)$$

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Variable rigidity shells ...

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from which, after mathematical transformations, 8 particular solutions are obtained. These solutions provide the formulae for the shear forces bending moments, torques and the membrane forces. An example is solved for a spherical shallow shell of variable thickness loaded by its own weight which rests on two movable hinged supports forming a structure of a large roof. Calculations are performed in dimensionless coordinates and particular solutions are assumed in the form of power functions. The thickness is assumed to vary proportionally to the square of the distance from the center. There are 4 figures and 24 references: 8 Soviet-bloc and 16 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: Chao Hweryuan, Thermal Stresses in Shells of Revolution of Variable Elastic Properties, Scientia Sinica 4, 8 (1959) p. 383-400; E. L. McDowall, E. Sternberg, Axisymmetric Thermal Stresses in a Spherical Shell of Arbitrary Thickness, Paper Amer. Soc. Mech. Engrs. No APM 14 (1957); I. D. Conway, On Axially Symmetrically Loaded Circular Shell of Variable Thickness, ZAMM, 1/2, 38 (1958); M. Soare, Die Anwendung der Differenz-Gleichungen beim Studium der Schalen, Baupl. Bautech. 10, (1956), p. 407.

Card 3/4

Variable rigidity shells ...

31125
P/033/61/013/005/001/006
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ASSOCIATION: The Polytechnic Institute of Warsaw

SUBMITTED: March 13, 1961

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P/006/63/011/001/002
D237/D308

AUTHOR: Łukasiewicz, Stanisław (Warsaw)

TITLE: An improvement of the equations of Vlasov's engineering theory of shells

PERIODICAL: Rozprawy inżynierskie, v. 11, no. 1, 1963, 145-163

TEXT: The author derives the equation of the theory of thick shells, which are more accurate than those of Vlasov. The stress-strain equations obtained are

$$D \left[\Delta + \left(\frac{1}{R_1^2} + \frac{1-\nu}{2R_1R_2} + \frac{1}{R_2^2} \right) \right]^2 w - \Delta_k \Phi = x_3 - \left(\frac{1}{R_1} + \frac{1}{R_2} \right) U, \quad (4.18)$$

$$\frac{1}{Eh} \Delta \Delta \Phi + \Delta_k w = \left(\frac{1-\nu}{Eh} \right) \Delta U.$$

and for a cylindrical shell, they can be reduced to Morley's equations. The accuracy of (4.18) when compared with Flügge's exact Card 1/2

An improvement of the equations ...

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D237/D308

equations, was found to be within 1%. For shells with double curvature, some parametric values of the Donnell-Vlasov, Morley and Flugge equations are tabulated in order to illustrate their relative merits. There are 3 figures and 3 tables.

ASSOCIATION: Politechnika Warszawska (Warsaw Polytechnic)

SUBMITTED: March 1, 1962

Card 2/2

L 13318-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m) IJP(c) WW/EM

ACC NR: AP6002673

SOURCE CODE: PO/0032/65/012/004/0431/0443

AUTHOR: Lukasiewicz, Stanislaw (Warsaw)

ORG: none

TITLE: The equations of the theory of non-shallow thin shells 24

SOURCE: Archiwum budowy maszyn, v. 12, no. 4, 1965, 431-443

TOPIC TAGS: shell theory, thin shell structure, shell deformation

ABSTRACT: The purpose of this paper is to correct the Vlasov equations in order to extend their application to non-shallow shells of slowly varying contour. These equations should be simple and should include all the smooth-shape shells. The equations for shallow shells of variable rigidity were given earlier (The equations of the technical theory of variable rigidity. Arch. Mech. Stos., 1.13 (1961)). They were obtained making the same assumptions as in Vlasov's work and consequently are restricted to the same class of shells. The theory of thin shells presented is based on certain approximate assumptions which make possible the determination of the section forces at any point of the shell as a function of the deformation of the middle surface. The assumptions are: 1) the deformations (except the deformation normal to the middle surface) are small as compared to the thickness, the material is subject to the generalized Hooke's law; 2) points of the shell lying on a normal before deformation, lie on a

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ACC NR: AP6002673

normal after deformation; 3) there is no interaction between layers parallel to the middle surface; 4) the thickness of the shell is small in relation to the curvature radius; and 5) the shells considered here are smooth in shape. The results obtained by the present equations were compared with those obtained from the Flugge's exact equation for cylindrical shells. The errors were within 0.5%. Orig. art. has: 27 formulas and 1 figure. 0

SUB CODE: 13/ SUBM DATE: 00Apr65/ ORIG REF: 001/ OTH REF: 010/ SOV REF: 001

Card 2/2 *FW*

LUKASIEWICZ, Szczepan

Traumatic rupture of the diaphragm. Polski przegl. chir. 35
no.3:237-239 '63.

1. Z Oddzialu Chirurgicznego Szpitala Nr 2 w Myslowicach
Ordynator: dr T. Boczon.

(DIAPHRAGMATIC HERNIA, TRAUMATIC)
(ACCIDENTS, INDUSTRIAL) (MINING)

POLAND/Organic Chemistry. Natural Compounds and their
Synthetic Homologues.

E-3

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19323.

Author : Mejer S. Kwiatkowski E., Lonkowski P. Lukasiwicz W.,
Modon. Zborucki Z.

Inst :
Title : Modification of the Synthesis of Testosterone.

Orig Pub: Przem. Chem., 1956, 12, No 5, 287-288.

Abstract: A modified synthesis of testosterone is developed (I).
From the semicarbazone of dehydroepiandrosterone acetate,
isolated from neutralized products of cholesterol degra-
dation Δ^4 with a yield 91.5% dehydroepiandrosterone is
obtained. By oxidation of the latter, according to Oppen-
auer, by means of cyclohexanone and aluminum isopropy-
late in toluene -androstendione-3.17, yield 90%, which
is transformed into the ethyl ether of 3-enole (II) is

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POLAND/Organic Chemistry. Natural Compounds and their
Synthetic Homologues.

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Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19323.

obtained. By the reduction of II by means of LiAlH_4 is obtained the ethyl ether of enole I (III), the yield is nearly quantitative. Acetylation of III $(\text{CH}_3\text{CO})_2\text{O}$ in pyridine leads to the acetate III, m.p. $128-130^\circ$. By heating the latter in acetone in the presence of an acid acetate I, yield 93%, is obtained.

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S/081/62/000/021/009/069
B168/B101

AUTHOR: Lukasiewicz-Ziarkowska, Zofia

TITLE: Determination of γ -hexachloro cyclohexane in industrial products containing 90-100% of this component, using a method of infrared spectrophotometry

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 107, abstract 21D149 (Chem. analit. [Polska], v. 6, no. 5, 1961, 831-840 [Pol.; summary in Eng.])

TEXT: The author developed a method for the quantitative determination of γ -hexachloro cyclohexane (I) in mixtures containing >90% I, based on measurement of the absorption at 11.8 and 11.5 μ of solutions containing 0.2 g I in 25 ml CH₃NO₂ (layer thickness 0.105 cm). The mean error for the method $\pm 1.0\%$ can be reduced to $\pm 0.2\%$ by applying a correction factor to the γ -hexachloro cyclohexane content. [Abstracter's note: Complete translation.] ✓

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Analytical Dept of Organic Chem, Warsaw

POLAND

LUKASIEWICZ-ZIARKOWSKA, Zofia, mgr

1. Dept. of Analysis, Institute of Organic Industry
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